

REMARKS

This Amendment is filed in response to the Office Action dated May 16, 2005. For the following reasons this application should be allowed and the case passed to issue. No new matter is introduced by this amendment. The amendment to claims 1 and 8 and new claims 27 and 34 are supported by Table 1 on page 18 of the specification. Support for the amendment to claim 5 is found in claim 13. New claims 19, 20, 28, and 29 are supported by the specification at page 6, lines 3-9. Figures 1 and 2, and the accompanying portions of the written description, provide support for new claim 21. New claims 22 and 23 are supported by claims 3 and 4. Claims 10 supports new claims 25 and 32. Support for new claims 26 and 33 is found in claim 18.

Claims 1, 3-12, and 14-34 are pending in this application. Claims 1, 3-12, 14, and 16-18 have been rejected. Claims 1, 5, 8, 9, 14, and 16 have been amended. Claim 2 was previously canceled. Claim 13 has been canceled in this response. Claims 19-34 are newly added.

Specification

The Examiner asserted that the incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. The Examiner further indicated that Applicants are required to amend the disclosure to include the material incorporated by reference. Furthermore, the Examiner considered the attempt to incorporate subject matter into this application by reference to Japanese Patent Application No. P2002-187912 ineffective. The Examiner, however, did not indicate what essential material was incorporated by reference and needed to be included in the specification by amendment.

It is requested that the Examiner identify the essential material that needs to be included in the specification, so that Applicants can prepare and submit an amendment to the specification, if necessary.

Claim Rejections Under 35 U.S.C. §§102/103

Claims 1-10, 12, 14, 16, and 17 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Japanese Patent Publication No. 2002-082610 (JP '610).

Claims 11 and 18 were rejected under 35 U.S.C. § 103(a) as obvious over JP '610 in view of Harmada (U.S. Pat. No. 5,316,595).

These rejections are traversed, and reconsideration and withdrawal thereof respectively requested. The following is a comparison between the invention, as claimed and the cited prior art.

An aspect of this invention, per claim 1, is a rare earth magnet comprising a sintered body including rare earth magnet particles, and a rare earth oxide being present between the rare earth magnet particles, the rare earth oxide being represented by a following general formula (I):



where R is any one of terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium. The rare earth magnet particle is constituted by a cluster of numerous crystal grains. An electric resistivity of the rare earth magnet is 26.0 $\mu\Omega\text{m}$ or more.

Another aspect of the invention, per claim 5, is a method of manufacturing the rare earth magnet comprising a step of forming a rare earth magnet particle constituted by a cluster of numerous crystal grains, a step of preparing a mixture including the rare earth magnet particle

and a rare earth oxide, a step of filling the mixture in a molding die; and a step of molding the mixture at a temperature of 600°C to 850°C.

Another aspect of the invention, per claim 8, is a motor comprising the rare earth magnet.

JP '610 and Harmada, whether taken alone, or in combination, do not anticipate or suggest the claimed rare earth magnet and motor. JP '610 and Harmada disclose rare earth magnets having a rare earth oxide. However, these references fail to disclose rare earth magnets having a rare earth oxide and a rare earth magnet particle constituted by a cluster of numerous crystal grains, as required by independent claims 1, 5, and 8.

The rare earth magnet, according to claim 1 requires that the electric resistivity of the sintered body is 26.0 $\mu\Omega\text{m}$ or more. The rare earth magnet of the present invention exerts high electric resistance and low eddy current loss. Accordingly, the rare earth magnet of the present invention shows low heat generation and is therefore advantageous in terms of thermal design. Moreover, the rare earth magnet of the present invention also possesses excellent magnetic characteristics. Accordingly, the rare earth magnet of the present invention effectuates enhancement in the continuous output of a motor. Thereby the rare earth magnet of the present invention has high coercive force (see page 3, line 16-18 and page 6, line 9-21 of the specification).

Further, the rare earth magnet of the present invention requires that the rare earth magnet particle is composed of a cluster of numerous fine crystal grains (see page 3, lines 8-16 of the specification and FIG. 2). Because of this feature, it is possible to enhance the coercive force of the rare earth magnet.

In the office action, Examiner asserted that "Japan '610's sintered rare earth-iron-boron product would be expected to possess all the same properties as recited in the instant claims".

However, Japan '610 discloses that an electric resistivity of the JP '610 magnet is 12.5 and $14.8 \times 10^{-8} \Omega\text{m}$ (12.5 and $14.8 \times 10^{-2} \mu\Omega\text{m}$) (see Table 1). The electric resistivity of the JP '610 magnet is too low, so that eddy current loss is increased when the rare earth magnet is incorporated in a motor. Hence, the JP '610 magnet does not possess the properties of the present invention.

Applicants submit that claim 1 is in condition for allowance, and claims 3, 4, 9, 10, 11, 19 and 20 are also in condition for allowance by virtue of their dependency from independent claim 1. Further, Applicants submit that claims 8 and 16-18 for the motor including the rare earth magnet are also in condition for allowance.

The rare earth magnet of the new claim 21 requires that a sintered body includes rare earth magnet particles and a rare earth oxide being present only between the rare earth magnet particles (see FIGs. 1 and 2). In the rare earth magnet of the present invention, the rare earth magnet particle is constituted by a cluster of numerous crystal grains. New claim 25 requires that a size of the crystal grain is not greater than a single-domain critical grain size. Hence, the coercive force of the rare earth magnet can be enhanced. Further, because the rare earth oxide is present only between the rare earth magnet particles, the rare earth magnet has high coercive force and high electric resistance.

However, JP '610 discloses that the rare earth oxide is contained in the crystal grain boundary of a magnet alloy structure (see the abstract of a machine translation of JP '610). Hence, the magnet of JP '610 does not have high coercive force, and as described above, does not have high electric resistivity. Therefore, JP '610 fails to disclose the magnet of new claim 21 and claim 21 is in condition for allowance. New claims 22-29 are also in condition for

allowance by virtue of their dependency from independent claim 21. In addition, independent claim 30 and dependent claims 31-34 are allowable for at least the reasons discussed above.

The dependent claims further distinguish the claimed rare earth magnet and motor. For example, claims 9, 16, 24, and 31 require a size of the crystal grain constituting the rare earth magnet particle is 500 nm or below. Claims 10, 17, 25, and 32 require that the size of the crystal grain is not greater than a single-domain grain size.

Allowable Subject Matter

Claims 13 and 15 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Applicants gratefully acknowledge the indication of allowable subject matter.

Amended claim 5 is claim 13 rewritten in independent form. Therefore, claim 5 should be allowable, along with claims 6, 7, 12, and 14-15, which depend from claim 5.

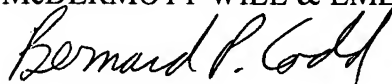
In light of the above Amendment and Remarks, this application should be allowed and the case passed to issue. If there are any questions regarding these remarks or the application in general, a telephone call to the undersigned would be appreciated to expedite prosecution of the application.

Application No.: 10/600,602

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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